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**FOREST PRODUCTS RESEARCH IN PICTURES**

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NO. 25

**COPPER SALT FAILS TO  
STOP MARINE BORERS**



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**FOREST PRODUCTS LABORATORY  
U. S. FOREST SERVICE  
MADISON, WISCONSIN**

The photograph shows southern pine specimens which the Forest Products Laboratory exposed for 14 months in salt water at Pensacola, Florida, to test the properties of a copper salt as a marine borer retardant.

Since marine borers have in some cases failed to attack wood in the vicinity of copper nails or sheathing, it was thought that treatment of wharf piling with copper salts might act as a protection against the attack of the small salt water animals which destroy wood worth hundreds of thousands of dollars in ocean ports every year.

The treating solution used for the particular group of specimens shown here was composed of 8.5 parts sodium carbonate, 1.5 parts sodium bicarbonate, and 100 parts water mixed with a heavy solution of copper sulphate. The alkaline carbonate solution is supposed to dissolve about 0.7 per cent copper sulphate. A pressure treatment was used to insure thorough impregnation.

The scientist who suggested a trial of this solution by the laboratory believed that in the course of several hours after treatment there would be crystallized out in the wood a double salt of copper and sodium, completely insoluble in water and therefore not liable to wash or leach out of the wood. Although a material completely insoluble in water would not be toxic, it was thought that the body acids of the borers would liberate sufficient copper to make it effective.

In the 14-months test, however, the treated specimens were attacked by shipworms and reduced to a spongy, friable condition. No conclusion applicable to all copper salts should be drawn from this test.

A treatment which will protect submerged wood from destruction by marine organisms is still being sought by the National Research Council and the Forest Products Laboratory. Up to the present time, coal tar creosote is the preservative which has given most effective service in retarding shipworm destruction.

(Photograph by Forest Products Laboratory, U. S. Forest Service)



